Remarks

Claims 1-7, 9-21, 23-24, 26-41, 43, 45-59, 61-63, 66-69, 71-72, and 74-75 are pending in the application. Applicants thank the Examiner for the allowance of claims 61, 62, 66-69, 71, 72, 74, and 75.

Claims 1, 23, 37, and 43 have been amended in order to expedite prosecution in this case, but Applicants reserve the right to pursue the subject matter of these claims in their original form in a continuation application. Claims 10, 20, 30, 31, 33, 49, 50, 63, 66, 71, and 72 have been amended to correct typographical and grammatical errors. Claims 8, 22, 25, 42, 44, 60, 64-65, 70, 73, and 76-86 have been canceled, but Applicants reserve the right to pursue the subject matter of these claims in a continuation application.

Statement of Substance of Examiner Interview

Applicants thank the Examiner for the courtesies extended to the undersigned in a telephonic interview on March 22, 2006, during which the outstanding 35 U.S.C. § 112, first paragraph rejection of claim 1 and the outstanding 35 U.S.C. § 103 rejection of claim 23 were discussed. Examiner Davis clarified, in general, the type of language that could be used to overcome the § 112 rejection with respect to substituent Y in claim 1. In addition, Examiner Davis stated that a showing of unexpected results could form the basis for overcoming the § 103 rejection of claim 23.

Claim Objections

Claims 20, 33, and 50 have been objected to as allegedly containing grammatical errors. Applicants respectfully submit that the objections have been overcome by the claim amendments. Accordingly, the objections are now moot.

Rejections under 35 U.S.C. § 112

Claims 1, 23 and 43 have been rejected under 35 U.S.C. § 112, second paragraph as allegedly indefinite because, while the process is directed to sertraline, the final process of making sertraline is recited as an optional step. The claims have been amended to recite making sertraline or an intermediate thereof. Further, the "if necessary" language has been deleted from the claims. In addition, as the Examiner suggested in the telephonic interview on March 22, 2006, the claim language has been clarified by reciting "wherein Y is ~~optionally~~ either absent or an oxygen atom." Accordingly, the rejection is now moot and

should be withdrawn.

Claims 8, 25 and 44 have been rejected under 35 U.S.C. § 112, second paragraph as allegedly indefinite because it is allegedly unclear whether Y is substituted or not. This rejection has been rendered moot by the cancellation of claims 8, 25 and 44.

Claim 37 has been rejected under 35 U.S.C. § 112, second paragraph as allegedly indefinite because it recites a continuous range as two separate ranges. The claim has been amended to recite a single range from about 30 mesh to about 80 mesh. Accordingly, the rejection is now moot and should be withdrawn.

Claim 60 has been rejected under 35 U.S.C. § 112, second paragraph as allegedly indefinite as depending from an indefinite claim. Since claim 60 has been cancelled, the rejection is now moot.

Rejections under 35 U.S.C. § 102(b)

Claims 22, 42, 60, 65, 70, 73, 76-78, and 87 have been rejected under 35 U.S.C. § 102(b) as allegedly anticipated by various references. These rejections have been rendered moot by the cancellation of claims 22, 42, 60, 65, 70, 73, 76-78, and 87.

Rejections under 35 U.S.C. § 103(a)

Claims 23-41 and 63 have been rejected under 35 U.S.C. § 103(a) as allegedly obvious in view of U.S. patent No. 4,536,518 ("'518 patent") and/or U.S. patent No. 6,034,274 ("'274 patent"). Applicants respectfully traverse.

The Federal Circuit in *In re Dembiczak*, 175 F.3d 994 (Fed. Cir. 1999), set forth three requirements to make out a *prima facie* case of obviousness under 35 U.S.C. § 103(a) in light of the prior art. In order to be *prima facie* obvious: (i) there must be some teaching or suggestion in the prior art to modify or combine references to form the claimed invention, (ii) there must be a reasonable expectation of success taught or suggested in the prior art, and (iii) all of the elements of the claimed invention must be found in the prior art. *See also* M.P.E.P. § 2143. Once a *prima facie* case of obviousness is established, the Applicant may overcome it by a showing of secondary considerations, such as unexpected results. *See* M.P.E.P. § 2141(III).

The '518 patent discloses the batch hydrogenation of an imine intermediate of sertraline over Pd/C. '518 patent, col. 10, ll. 11-13. The '274 patent discloses the

hydrogenation of N-methyl-[4-(3,4-dichlorophenyl)-1,2,3,4-tetrahydro-napthalene-1-en]-amine-N-oxide with a Raney-Nickel catalyst. '274 patent, col. 2, l. 43, col. 3, ll. 15-19.

Claims 23-41 and 63 recite hydrogenation of an imine intermediate of sertraline with a metal catalyst in a trickle-bed reactor. Since neither the '518 patent nor the '274 patent teaches or suggests hydrogenation of an imine intermediate of sertraline in a trickle-bed reactor, these references cannot render claims 23-41 and 63 obvious.

The Office nevertheless concludes that "[t]he mere selection of a reaction vessel cannot impart patentability" to a process, citing *In re Leum*, 158 F.2d 311, 72 U.S.P.Q. 127 (C.C.P.A. 1947). Office Action, p. 6, ll. 8-10. *Leum*, however, is inapposite. In *Leum*, the court found that applicants' claims to a process carried out in a closed system were obvious over the prior art disclosure of the same process carried out in an open system. *Leum*, 158 F.2d at 312. Unlike in *Leum*, the present Applicants did not merely add a lid to the system.

Use of a trickle-bed reactor differs from use of a batch reactor in that the trickle-bed reactor allows for continuous reaction. Moreover, the catalyst is fixed to a solid support in a trickle-bed reactor, which allows for maximum exploitation of the catalyst because the same catalyst is used until its deactivation. As such, it is more economical than the batch reactor, and, thus, more desirable for industrial application.

Further, Applicants' specification demonstrates that hydrogenation in a trickle-bed reactor produces higher yields of cis-sertraline hydrochloride than in a batch reactor. For example, hydrogenation of the imine intermediate with catalyst G-69 in THF in a batch reactor produced cis-sertraline hydrochloride in 79.2-83.7% yield, while hydrogenation in a trickle-bed reactor with the same catalyst produced cis-sertraline hydrochloride in 86% yield. *See* Specification, p. 11, Table 3 and p. 23, Example 6.

Further, Applicants' specification demonstrates that hydrogenation in a trickle-bed reactor produces cis-sertraline hydrochloride with consistently low levels of dechlorinated side (DCS) compounds, in contrast to hydrogenation in a batch reactor. cis-Sertraline hydrochloride prepared by hydrogenation in a batch reactor may contain DCS compounds in the range of 0.02% to 2.8% area HPLC, while cis-sertraline hydrochloride prepared by hydrogenation in a trickle-bed reactor consistently contains DCS compounds in an amount of about 0.1% area HPLC. *See* Specification, pp. 10-12, Tables 1-4 (batch reactor); p. 22, Table 6 (trickle-bed reactor). Consistent results are desirable for industrial processes.

Accordingly, the rejection of claims 23-41 and 63 as obvious in view of the '518 patent and/or the '274 patent cannot stand and should be withdrawn.

Claims 79-86 have been rejected under 35 U.S.C. § 103(a) as allegedly rendered obvious by U.S. patent No. 2,486,361 in view of U.S. patent No. 3,860,532. This rejection has been rendered moot by the cancellation of claims 79-86.

Conclusion

In view of the foregoing amendments and remarks, Applicants respectfully submit that the application is in condition for allowance. Should the Examiner not agree with Applicants' position, a personal or telephonic interview is respectfully requested to discuss any remaining issues prior to the issuance of a further Office Action, and to expedite the allowance of the application.

Respectfully submitted,
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